

**House Committee on Agriculture and Natural Resources Budget  
Testimony on Arkansas River Streamgages  
Paul Graves, Assistant Chief Engineer  
February 7, 2011**

Chairperson Schwartz and members of the committee, I am Paul Graves, Assistant Chief Engineer of the Kansas Department of Agriculture's Division of Water Resources. I appear before you today to respond to questions about Arkansas River streamgages.

During the course of our testimony about meter readings on January 26, 2011, questions were raised by the committee about Arkansas River streamgages discontinued due to Division of Water Resources budget cuts. Specifically, the committee inquired about the number of streamgages discontinued and the state costs to operate those gages.

Attached is a table listing 12 streamgages that DWR had to cease funding for in FY 2011 due to budget cuts. As a result, the U.S. Geological Survey discontinued operation of seven of the 12 gages. USGS and Kansas Water Office were able to find alternate federal funding to continue operation of the other five gages.

Five of the seven gages discontinued are located in the Arkansas River or in irrigation ditches fed by Arkansas River flows. A map of the gage locations is attached. DWR's share for funding these five discontinued Arkansas River/ditch gages would have been \$33,420 in FY 2011. At present, the state cost to resume operation of these five gages would be \$55,360 because federal matching funds were committed to other streamgages and federal funds for streamgages are expected to decrease this year.

The loss of these gages does not affect our ability to determine Colorado's compact compliance, as state line flows are determined from the sum of flows at the Frontier Ditch and Coolidge, where streamgages remain operational. The operational costs of these two gages are paid for by the U.S. Geological Survey and the Arkansas River Compact Administration.

However, there are adverse impacts to the state when streamgages are discontinued. The attached article from our June 7, 2010 weekly newsletter summarizes the benefits of streamgages and impacts of discontinuing the gages affected by DWR's budget reductions. In particular, the loss of the five Arkansas River/ditch gages has impaired the ability to quantify releases needed from John Martin Reservoir to satisfy irrigation ditch demands and to distribute the available surface water flows to those ditches.

Since last spring, when these budget cuts became a reality, DWR has been engaged in discussions with stakeholders and partners including irrigation ditch companies, Southwest Kansas Groundwater Management District No. 3, and U.S. Geological Survey to explore alternative funding for these gages and alternative methods for monitoring and allocating Arkansas River flows. Some of the options considered include seasonal operation of the gages at a lower annual cost or requiring ditch companies to accurately measure water diverted as other water right holders have been required to do, perhaps using existing flumes. Until a permanent solution is implemented, DWR staff have used estimation methods to monitor and allocate flows among the Kansas water users.

Thank you for the opportunity to respond to the committee's questions on this matter. I will stand for questions at the appropriate time.

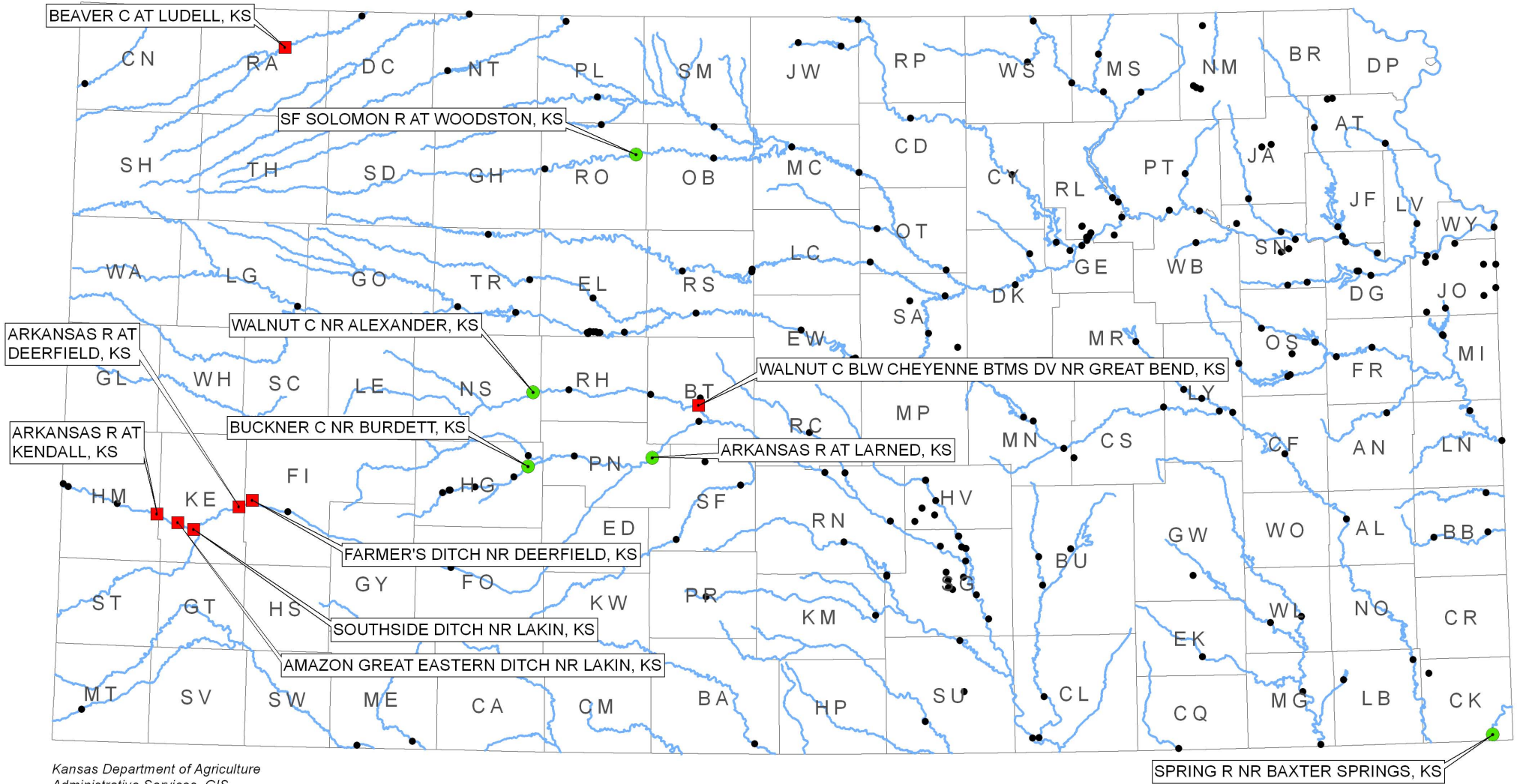
**FY 2011 State Cost-Share for USGS Streamgages Previously Contracted with DWR in FY 2010**

(Based on May 26, 2010 meeting with USGS and January 31, 2011 email from USGS)

Location	State share of cost to continue (as of May 2010)	State share of cost to resume (as of Jan. 2011)	Outcome
Amazon Great Eastern Ditch near Lakin	\$ 4,000	\$ 8,000	Discontinued
Arkansas River at Deerfield	\$ 10,710	\$ 15,680	Discontinued
Arkansas River at Kendall	\$ 10,710	\$ 15,680	Discontinued
Arkansas River near Larned	\$ 6,780	NA	Funded through U.S. Geological Survey
Beaver Creek at Ludell	\$ 9,180	NA	Discontinued
Buckner Creek near Burdett	\$ 9,180	NA	Funded through U.S. Geological Survey
Farmer's Ditch near Deerfield	\$ 4,000	\$ 8,000	Discontinued
SF Solomon River at Woodston	\$ 10,710	NA	Funded through Kansas Water Office
Southside Ditch near Lakin	\$ 4,000	\$ 8,000	Discontinued
Spring River near Baxter Springs	\$ 1,200	NA	Funded through Kansas Water Office
Walnut Creek below Cheyenne Bottoms Diversion near Great Bend	\$ 10,170	NA	Discontinued
Walnut Creek near Alexander	\$ 9,180	NA	Funded through U.S. Geological Survey
Total	\$ 89,820	NA	
Total for seven discontinued gages	\$ 52,770	NA	
Total for five discontinued Arkansas River/ditch gages	\$ 33,420	\$ 55,360	

Note: Cost to resume operation of the discontinued streamgages has increased because USGS matching funds were allocated to other gages and are no longer available for these gages. The May 2010 continuation costs were for annual operation of the gages; the Jan. 2011 resumption costs would be for annual operation of the river gages and seasonal operation of the ditch gages.

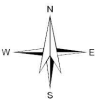
# USGS Streamgages



Kansas Department of Agriculture  
 Administrative Services, GIS  
 February 3, 2011

## Gages

- Continued (5)\*
- Discontinued (7)\*
- Other (213, of which 40 are stage only)



\*Gages funded in part by DWR in FY 2010 and continued with funding by other agencies in FY 2011 or discontinued in FY 2011 due to budget cuts.

[From <http://www.ksda.gov/dwr/content/314/cid/1690>]

## DWR Currents

June 7, 2010

### **Stream Gages to be Discontinued at Seven Locations Due to Reduced Funding**

Fiscal year 2011, which begins July 1, 2010, marks the third consecutive year DWR has received less funding than the year before. Budget reductions mean hard choices about which services to discontinue. In fiscal year 2011, one of the biggest losses is stream gages funded jointly by DWR and the U.S. Geological Survey.

Stream gages are equipment used to measure the water level and flow rate in streams. Data from stream gages are used for many important purposes, including monitoring compact compliance, administering minimum desirable streamflows set by state law, flood prediction and monitoring, drought monitoring, regulating releases from reservoirs, regulating water rights, calibrating computer models, as well as water quality and ecological issues.

Many people probably do not notice stream gages, as their only visible component is a utility box next to a stream, usually at a bridge or other convenient access point.

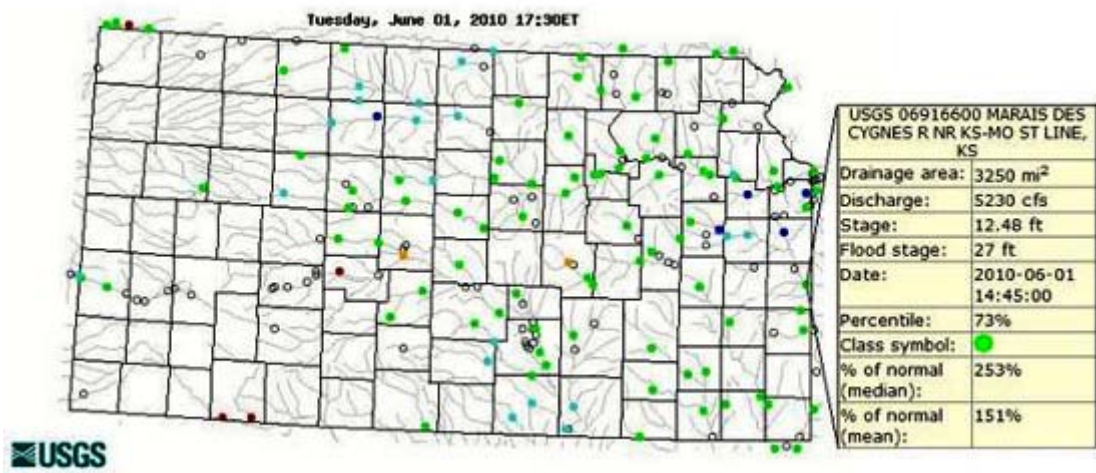
*Right: USGS stream gage on Neosho River near Iola. This is a "centennial" river gage, meaning data have been collected continuously at this location for more than 100 years. (Photo courtesy of USGS Kansas Water Science Center)*



Underground tubes connect equipment inside the box to water in the stream. In the past, the equipment may have included float assemblies that marked water levels on a rotating paper chart. Current technology typically used a pressure transducer, air compressor, data recorder, telecommunication transmitter and battery mounted inside the box. Externally mounted equipment typically includes a rain gauge, communications antenna and solar panel.

USGS currently operates 182 real-time data stream gages in and along Kansas' borders. State partners in funding the gages include the Kansas Water Office and Kansas Department of Health and Environment. In recent years, through fiscal year 2010, DWR shared costs with USGS on about a dozen stream gages.

*Below: Map of Kansas showing existing stream gage locations and representative data provided by the gages. (Image courtesy of USGS Kansas Water Science Center) To access the map shown, visit USGS's [WaterWatch website](#).*



With rising costs and level budgets, occasionally lower-priority stream gages were discontinued in years prior to the economic recession. This is a long-term trend that Kansas and other states and organizations have repeatedly petitioned the federal government to address.

However, in fiscal year 2011 alone, seven stream gages formerly funded in part by DWR will be discontinued due to budget cuts stemming from reduced state revenues. Gage locations to be discontinued include: Beaver Creek at Ludell, Amazon Great Eastern Ditch near Lakin, Southside Ditch near Lakin, Farmer's Ditch near Deerfield, Arkansas River at Kendall, Arkansas River at Deerfield, and Walnut Creek below Cheyenne Bottoms Diversion near Great Bend.

Loss of data from the discontinued Arkansas River and ditch stream gages will have significant impacts on DWR's ability to accurately and timely monitor flows, including releases from John Martin Reservoir in Colorado, and to apportion available flows among water users, including the several irrigation ditch companies. Loss of data from the other discontinued stream gages will significantly impact DWR's ability to accurately and timely monitor flows for compact compliance and regulation of water rights during times of water shortage. Other impacts from the loss of these stream gages will include reduced ability to predict and monitor floods and droughts, to calibrate hydrologic models for accuracy, and to protect water quality and ecosystems.

Some good news is that USGS and Kansas Water Office were able to use some increased federal funding to maintain six other stream gages formerly funded in part by DWR. The gages are at South Fork Solomon River at Woodston, Buckner Creek near Burdett, Arkansas River near Larned, Walnut Creek near Alexander, Arkansas River at Syracuse, and Spring River near Baxter Springs.

DWR is saving more than \$90,000 by not funding these 13 stream gages. This is just a fraction of the cuts the agency faces due to reduced funding in fiscal year 2011. Other measures taken to deal with budget cuts include holding vacant positions open, eliminating most equipment purchases or upgrades, eliminating association memberships and substantially reducing travel.

It is hoped that other partners may be found to fund the seven stream gages that will otherwise be discontinued in fiscal year 2011.